Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A method for forming a two-dimensional ordered array of proteins, comprising:

contacting a population of proteins with ~~an~~ gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that ~~an~~ two-dimensional ordered array of said proteins is formed at said interface~~, wherein said two-dimensional ordered array has a diameter greater than 25 μm~~.

2. **(Cancelled)**.

3. **(Previously Presented)** The method of claim 64, wherein said amphiphilic molecule comprises a protein.

4. **(Currently Amended)** The method of claim 1 ~~or 3~~, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.

5. **(Currently Amended)** The method of claim 1 ~~or 3~~, wherein said protein is contacted with said interface in the presence of lipids.

6. **(Currently Amended)** The method of claim 1 ~~or 3~~, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.

7. **(Cancelled)**.

8. **(Currently Amended)** The method of claim 1 ~~or 64~~, wherein said interface is a airgas-aqueous interface.

Claims 9-62 **(Cancelled)**.

63. **(Previously Presented)** A method for forming a two- or three-dimensional ordered array of membrane proteins, comprising:

contacting a population of membrane proteins with a gas-aqueous interface, wherein said population of membrane proteins are applied to said interface in a proteoliposome;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said membrane proteins is formed at said gas-aqueous interface.

64. **(Currently Amended)** A method for forming a three-dimensional ordered array of amphiphilic molecules, comprising:

contacting a population of amphiphilic molecules with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a three-dimensional ordered array of said amphiphilic molecules is formed at said interface, wherein said appropriate pressure is above a critical density point for the formation of a two-dimensional ordered array of said amphiphilic molecules.

Claims 65-66. **(Cancelled).**

67. **(Previously Presented)** The method of claim 1, wherein said two-dimensional ordered array is a two-dimensional crystalline array.

68. **(Previously Presented)** The method of claim 64, wherein said three-dimensional ordered array is a three-dimensional crystalline array.

69. **(New)** The method of claim 3, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.

70. **(New)** The method of claim 3, wherein said protein is contacted with said interface in the presence of lipids.

71. **(New)** The method of claim 3, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.

72. **(New)** A method for forming a two- or three-dimensional ordered array of orphan receptor, comprising:

contacting a population of orphan receptor with an interface;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said orphan receptor is formed at said interface.

73. **(New)** A method for forming a two- or three-dimensional ordered array of proteins, comprising:

contacting a population of proteins with an interface;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said proteins is formed at said interface, wherein said proteins are not soluble in water.